THE VETERINARY RECORD

A Weekly Journal for the Profession.

EDITED BY WILLIAM HUNTING, F.R.C.V.S.

No. 269. SATURDAY, SEPTEMBER 2, 1893. VOL. VI.

ANTHRAX FOLLIES.

There is no denying that anthrax has shown some increase this season, but when allowance is made for the improved diagnostic powers of veterinary practitioners and the more general compliance with the notification clause of the Anthrax Order, there is no reason to believe that any very marked increase exists.

Probably the frequent paragraphs in the daily and weekly papers will do good by forcing attention to a dangerous and fatal malady; and from this point of view all the stupid actions and stupid sayings of authorities and advisers may be accepted as not altogether an unmixed evil. *The Lancet* in its superior manner finds fault with the Board of Agriculture for not making use of the "discoveries of modern science," but it fails to indicate what these are. Possibly protective inoculation is referred to, but the Central Authority is hardly so rash as to apply for an Act of Parliament enabling them to enforce compulsory inoculation. The dangers of anthrax vaccins are not yet sufficiently under control to warrant the frightful risks of general and compulsory inoculation. Private individuals may experiment on their own or neighbours stock without let or hindrance.

Another adviser states that all carcases should be incinerated. This would require an enormous fire, and very often in a place where fuel could only be obtained with great trouble and expense. The carcase would have to be acted upon whole or the extra danger of cutting it up would have to be faced. Cutting up a carcase is the very best method of favouring the development of the bacillus, and is attended with very great danger to the operators. Burial in the uncut hide is safe, and when quicklime surrounds the carcase worms are not likely to act as carriers for the infective organisms.

The greatest folly we have heard of is the unwarranted slaughter of animals that have been in contact with diseased beasts. Who advises Local Authorities thus to waste animal life and ratepayers' money? It is difficult to believe veterinary surgeons do so, and we are therefore forced to imagine that uninstructed authorities act without proper guidance. The period of incubation is too short to render in-contact-animals dangerous as carriers of the disease, and it is now well-known that the place, or in a few cases the food—not the living animal—is the danger in anthrax outbreaks. It really is shocking to read of these unnecessary sacrifices after so much good work has been done to elucidate the cause and methods of spread of this disease.

We very much regret to find that *The Anthrax Order of 1892* may be blamable for some of the misapplied energy of Local Authorities. Section 15 gives them power to slaughter "any animal being or having been in the same field, shed or other place, or in the same herd or flock or otherwise in contact mith any animal affected with anthrax." To the uninformed intelligence which does not differentiate between the methods of infection acting in anthrax and in pleuro-pneumonia, this clause may be accepted as the very strongest action permitted by the Central Authority, and therefore the very best. Such powers are evidently dangerous and they are quite unnecessary. But this is not the worst clause in the Order. Clause 10 gives a Local Authority power to make regulations for "prohibiting the movement of any animal out of an infected place." Probably some misguided authorities have issued such regulations and they may apologetically plead that if they are provided they ought to be used. Nothing is more certain than that every animal should be at once removed from an anthrax-infected place. To prevent their removal is very like enforcing their infection.

LOUPING ILL.

His Grace the Duke of Northumberland has initiated an enquiry into this disease and Dr. Klein, who conducted it, has issued his report. From the summary published by the Duke's agent—which we print on another page—it will be seen that no great advance has been made as to the nature and spread of the disease. Dr. Klein considers it due to a special infective germ which he has isolated but not been able to successfully use in the reproduction of the disease.

THE ARMY VETERINARY DEPARTMENT.

For the last two years the A.V.D. has been indulging in hopes and fears as to some alteration in the allowances of its officers. One important step has been gained. The authorities have not been prevailed upon to give any increase of pay or pension, but an extension of the gratuity given to retiring officers has been effected.

Hitherto a gratuity has been given to men retiring under a ten years period of service. Those retiring after ten years and under twenty received no gratuity. This was so obvious a disadvantage to those officers who had exceeded the ten years and for any reason were unable to complete the twenty that it constituted a practical grievance.

Thanks to the unceasing efforts of the Director General this is now altered, and a retiring gratuity will be given to all officers, whether over or under ten years service. The present Director General, in a quiet and unobtrusive way, seems to keep the welfare of his officers always within sight, and he has been most successful in obtaining changes favourable to their position and prospects.

CASES AND ARTICLES

PHOSPHETIC CALCULUS BROKEN WITHIN THE ANIMAL'S BODY.

By Frank Somers, M.R.C.V.S., Leeds.

On August 8th I was requested to attend a chestnut pony, seven years old, belonging to Edward W. Darby, Esq., wholesale meat salesman of this town. The animal was suffering from "colic" the usual symptoms in such cases being well marked, but the animal gradually got worse. In spite of anodynes, antispasmodics, hot fomentations, rectal explorations and injections, subcutaneous injections, death followed 36 hours after the commencement of the attack, from enteritis. On a post-mortem examination being made a calculus in two parts was found, the larger portion being in the cœcum or the blind end of the colon, and the other half was found to have occluded the intestine at the floating colon at some distance from the colon, and along with hard impacted fœcal matter had caused the enteritis. On placing the two halves of the calculus together they formed a perfect one weighing $1\frac{3}{4}$ pounds. The outside edges of the calculus on the broken portions were worn smooth.

How is it possible for a hard phosphetic calculus of $1\frac{3}{4}$lbs. weight to fracture within the animals body? I fail to find any such case recorded in veterinary literature; and I come to the conclusion that no external injury could cause a calculus to fracture. I should be glad if some of my professional colleagues could give any satisfactory explanation of what seems to be an almost impossible case. The post-mortem examination was conducted by me in the presence of several persons, and I have kept the calculus for the inspection of any member of the profession who desires to see it.

A FARMER'S SURGICAL OPERATION.

By Hugh Begg, M.R.C.V.S.

The report of two cases by Mr. F. G. Ashley in the last issue of *The Record*, under the heading "Susceptibility to Peritonitis, are very interesting, and as the case of the heifer shows the impunity with which the peritoneum of the ox may be handled without a fatal result, so the case of the colt is an additional proof of the well authenticated fact that peritonitis once established in equines is almost invariably fatal.

The following case which I saw fully two years ago may be interesting to your readers as showing what might be attempted by abdominal section in the cow, even though a certain amount of peritonitis be set up, without a fatal result.

I was called to a farm three miles out to a cow down with milk fever, and after attending to her, the owner asked me to look at another cow which he had "doctered" himself. This animal, a few days before had an acute attack of hoven and, the owner, fearing a sudden collapse plunged a butcher's knife into the distended rumen and gave the animal relief, but along with the rush of gas there was an exit of a a quantity of liquid food. Two days later a large swelling appeared on the left inferior aspect of the abdomen and into this he introduced the same knife and got away a quantity of liquid food which no doubt had overflowed the superior wound during the collapse of the rumen and had run down the side of that stomach to the floor of the abdomen and set up inflammation.

It was three days after this when I saw her and both wounds were discharging profusely, especially the inferior one, and though pressure on the left side of the abdomen indicated that the cow was suffering from peritonitis, still she continned to eat a moderate quantity of food. The inferior wound continued to discharge for more than a month, but gradually healed np. I have no doubt that the peritonitis thus set up caused adhesion of the rumen and some of the intestines to the abdominal wall, and yet four months later the cow was ready for the butcher having apparently recovered, in spite of the treatment to which she had been subjected.

I have recently made a post-mortem examination of the carcases of two cows which died from peritonitis with dropsy about a fortnight after calving, and in both cases there was but little healthy peritoneum to be seen, while the greater portion indicated disease of long standing, a smaller part presenting the dark red appearance of recent inflammation. One of these animals I can vouch for, looked extremely well before calving, probably owing to the bulky condition of the abdomen, and I have no doubt but that, to the throes of parturition and the subsequent depression of the patients in both cases, was due the recent attack of peritonitis, evidence of which was seen post-mortem, both animals being predisposed.

I have often remarked that the mesenteries of a mature cow appear thicker, if not stronger than those of the mature horse, and I am of opinion that if the peritoneum, or in fact any serous membrane is once inflamed, however slightly, it never resumes its normal healthy appearance, and that part is always predisposed to a future attack.

VETERINARY SOCIETIES.

BORDER COUNTIES VETERINARY MEDICAL SOCIETY.

A meeting of the Border Counties Veterinary Medical Society was held at the Bush Hotel, Carlisle, on Friday afternoon, the 25th August. There were present R. Rutherford, Esq., Edinburgh, President; Professor Williams, Edinburgh; Mr. G. Gartside Mayor, Kirkham; Mr. H. Thompson, Aspatria, (hon. treasurer); Mr. Carlisle, Carlisle; Mr. Bell, Carlisle; Mr. Pears, Longtown; Mr. Little, Abbeytown; Mr. McIntosh, Dumfries; Mr. Bell, Brampton; Mr. Hewson, Carlisle; Mr. Croudace, Haltwhistle; Mr. McKie, Carlisle; Mr. Donald, Wigton; Mr. Troughear, High Hesket; and Mr. John Armstrong, Penrith, (hon. secretary).

The minutes of the previous meeting were signed by Mr. Thompson, who expressed his satisfaction at seeing a better attendance on the present occasion, and urged the desirability of members supporting the Society to the best of their ability. He pointed out that a number of members were in arrears with their subscriptions.

Discussion took place upon this matter, and it was decided on the motion of Mr. McIntosh, seconded by Mr. Pears, that a reminder, including an extract from the rules bearing on the question, be sent to the members in arrear.

The PRESIDENT took this occasion to thank the Society for having elected him to his present position. He observed that the mere fact that the Society, in combination with one of two others, were able the other day to carry Mr. Thompson into the Council, and that Mr. Donald was also a member of the Council, ought to be sufficient to show members the power they possessed in combinations, and should urge them to keep together.

On the motion of Mr. Armstrong seconded by Mr. Thompson, the following new members were elected :—Mr. John Young, Skelton ; Mr. Miller, Langholm ; Mr. Fred. Armstrong, and Mr. John Siddle, Penrith.

In answer to the President as to the subject for next meeting, Mr. Armstrong said Professor Dewar, Edinboro' Veterinary College (Dick's) had promised a paper on "Antiseptic Surgery."

An address was then delivered on

"PAIN: ITS RELIEF AND PREVENTION."

By G. GARTSIDE MAYOR, F.R.C.V.S.

He expressed regret that time had not allowed him to prepare a paper upon the subject. He hoped that though his remarks might not be instructive to all of them, he would be able to raise a discussion which would do so.

He had been early struck with the carelessness of members of the profession with regard to the infliction of pain upon animals under their treatment. He had strong notions about the use of chloroform, and he would have commenced experiments before he became a member of the College if it had not been for the strong statements his late respected teacher Professor Pritchard used to make with regard to the use of chloroform on the horse. He had stated that if chloroform was administered, they would find that the operation would not do anything like so well. It was like carting coals to Newcastle, in his opinion, to come to Carlisle and talk about the use of chloroform ; and in complimentary terms he acknowledged the good services done in this direction by Mr. Roberts, late of Kendal, and by Mr. Carlisle, of Carlisle. He expressed his conviction that many members of the profession did not use chloroform so often as they might do. There was a little matter which he had the opportunity of bringing under his own County Association of Lancashire in 1886, which had reference to the preparation of an animal for the administration of chloroform. He then recommended a hypodermic injection of morphia and atrophine prior to the administration of chloroform. That was before they had got into the way of using the closed bag over the nostrils. The results were very satisfactory. The struggling was less, and chloroform had not to be so frequently repeated in protracted operations, and there was no doubt that where morphia was used in that way, in the reactionary shock and after a very painful operation the animal did not suffer so much. With the improved method of administering chloroform there was not anything like the same necessity for injecting morphia ; but in his own practice, in performing an operation on a horse the duration of which was uncertain, he still employed the hypodermic injection of morphia prior to using chloroform, and, he was satisfied, with very beneficial results. With regard to the use of cocaine as a local anæsthetic, he was told by three or four at the Yorkshire meeting that it was no earthly use. One man would not give £1 a ton for it. But he thought the majority of them used it with satisfactory results. He was one of the earliest members to use it, and he did so after careful experimentation, first on a pony, and next on himself. He used it constantly now for operations on the eye, and he found it especially useful in the case of dogs and other small patients, though it was not without an element of danger in such cases. There were many operations somewhat painful which they desired to perform upon animals without casting them. He was told there were veterinary surgeons who were in the habit of putting horses partially under the influence of chloroform without throwing them. He had tried it, but his experience was not at all favourable, and were he not prepared to cast a horse for an operation he would not advise the administration of chloroform. But there was one means of considerably alleviating an animal's sensibility which was easily at command. That was a hypodermic injection a short time before the operation—a tolerably good dose of atropine and morphia. Inject about a quarter-of-an-hour before the operation about a sixth part of a grain of atropine and four to six grains of morphia ; then you could get to work and fire them. The use of anæsthetics and narcotics had suffered, he considered, by reason of the cold water which had recently been thrown, particularly upon chloroform and morphia, or opium. Professor Fred. Smith spoke in approval of the action of chloroform ; still had he (Mr. Mayor) not been in the habit of using chloroform he would have been mortally frightened of putting a horse under it after Professor McQueen, of London, had told them it was necessary for the protection of the operator to have two practitioners in such cases. If that was so there were precious few times the majority of them would get the opportunity of using chloroform. But he had had 500 or 600 horses under chloroform, and he did not agree with those statements. There were mistakes and exaggerations, and it was very unfortunate that they should come from men of high professional standing. With regard to the use of opium, he quoted from De Quincy to show the "irresistible" power of opium as an anodyne in cases of suffering, and maintained that the day had not yet come when they could afford to turn opium out of their pharmacopœia. He would not enter into a disquisition of what was meant by a "sedative," but when he was told opium was not a sedative and morphia was simply an excitant, he said again his observations had not taught him so. He looked upon it as one of their most valuable drugs, and he was pleased to find that the conjoint use of atropine and morphia was recommended by several of the leading men on the Continent. If atropine was used carefully graduated according to the dose of opium, there was no doubt the power for good could be increased. The constipating effect of morphia was overcome in many instances by the conjoint use of atropine.

DISCUSSION.

The PRESIDENT, in inviting discussion, said Mr. Mayor had opened up a very interesting field of discussion. He wished he had gone further and had told them something about alleviaton of pain, the use of hot and cold water, the application of blisters in certain cases, and one or two other things. He was brought up in a school where the great alleviator of pain was the twitch and rapidity of action. He had seen about a quart of chloroform used in one case, many years ago, and though he was struck with the ease which it afforded the operator, he recollected that he would not care to use chloroform where there was so much difficulty in anæsthetising his patient. He pleaded guilty to being an operator *not* under the influence of chloroform trusting rapidity of action rather

than anything else. He had found cocaine very valuable as a lotion in diseases of the eyes. He had used it applied externally to the limbs of a thoroughbred or fidgetty horse for firing, and had been agreeably surprised at the effect. Lately he had a tube to put in for roaring, and he took the precaution to inject cocaine, about ten minutes before the operation, which was performed without the horse so much as winking. He thought cocaine was an extremely valuable local anæsthetic.

Mr. PEARS stated that he had not had much experience with chloroform, but had fired horses under its influence with beneficial effect.

Professor WILLIAMS said no doubt Mr. Mayor's essay would do a lot of good, as the action of chloroform and anæthetics generally was not very well understood. As the President had said, rapidity of action was a very great consideration with a man in a busy practice. In preparing for grave operations, a mixture of chloroform and ether answered better than either administered alone. Where there was an injured foot or some bowel disease, he had no hesitation in saying that deaths were due more to the pain, and the exhaustion brought by the pain than to the injury or the disease itself. For the relief of these undoubtedly they were much indebted to opium and its preparations. He did not think more than half a grain of atropia should be subcutaneously employed. He had used a grain with very good effect, but there was a risk of destroying the life of the patient. In cases of excessive agony in enteritis for example, they need not limit the dose of morphia; five or six grains or even more of which could be used. He mentioned the case of a horse having an inflamed foot; a subcutaneous injection of morphia was put in the thigh, and the pain was greatly alleviated. It would take a few days for the inflammation to subside, but he was positive that a condition of irritative fever had been prevented which under the old system would have cost the animal its life. He had no hesitation in advocating cocaine in local operations. It had advantages not possessed by morphia, and was very rapid in its action. For diseases which were associated with great pain he had implicit belief in morphia. The practice of veterinary medicine in the future would be more and more associated with the use of anæsthetics.

Mr. DONALD said much had been said and written about the use of chloroform, but what struck him most was that so little was heard of its danger. He had put five cattle under chloroform, with one death, and he knew of several other deaths in cattle; and he would not advise the use of chloroform in cattle largely. Respiration stopped suddenly when least expected, and he had given up using chloroform to cattle. He had heard of several cases in Cumberland of horses dying under chloroform, and he believed its use was accompanied with greater risks than was generally supposed. With regard to healing wounds, he thought they did just as well with chloroform as without it, and unless it was a serious case he would never use it. He thought it was more than any man was capable of doing, to perform an operation under chloroform without the aid of an assistant. In cases of parturition especially a great risk was run in placing animals under chloroform. He did not believe in partially choroforming an animal. When in a state of partial anæsthesia they were in a restless condition. He had not been able to operate successfully on an animal partially anæsthetised. Neither with the use of cocaine was his experience so favourable as that of others. He had tried it in the eye of a cow, but had been unable to produce the desired result.

The PRESIDENT:—What strength?

Mr. DONALD:—Twenty per cent. solution. He could easily get anæsthesia of the skin for firing or puncturing, but he could never get the effect in a cow's eye which would enable him to operate. He was pleased to hear Mr. Mayor speak about opium as he did. He thought opium was the gift of God in such cases and he knew of nothing that acted so beneficially. But he believed narcotic remedies could be combined and a better effect produced therefrom than from any of them singly. If the dose in delirium was increased, there would be a pronounced anodyne effect. In the case of plethoric animals, where opium or morphia did not seem to take effect, there would be an immediate result if the animal was bled.

Mr. MCINTOSH said he was one of the old school and only yesterday he fired with twitch, and twitch alone. Hypodermic injection for assistance in minor operations he had seldom tried. He had tried chloroform in serious operations. He was not an expert in chloroforming horses; but in dog practice he had been anything but successful. He had seen many deaths under trifling operations where persons had insisted on the use of chloroform. Its use by a country practitioner was almost out of the question. The time and the expense were serious matters of consideration. He was a strong and firm believer in opium, and the use of morphia was one of the benefits for which the veterinary profession had to be thankful. He scarcely agreed with Mr. Donald about its danger in parturition cases. He thought it was an advantage to use it when there was a presentation difficulty to deal with.

Mr. THOMPSON said he also had depended upon twitch more than upon chloroform, but in some of the serious operations the latter was very necessary. He thought he would much rather cast an animal and perform the operation in the old fashioned way than be at the risk of chloroforming it. In ordinary operations he did not think chloroform was needful. Cocaine was a very valuable agency and he found it to answer admirably, particularly in eye operations. He was astonished to hear the remarks of Mr. Donald on this point. He had found no difficulty whatever. Opium he looked upon as a sheet anchor. Unless they could kill the pain and give nature a chance of recruiting herself all the drugs in the world would not do. He gave instance of the use of large doses of morphia, showing to what an extent the habit could grow.

Mr. CARLISLE said chloroform was used extensively at his establishment, and it would not do for him to say it was all nonsense. He had chloroformed scores of horses in the old fashioned way, with chloroform in an old billy-cock hat (laughter) and he had seen the assistants take almost as much of the chloroform as would chloroform the horse. (Laughter). The horse was never thoroughly under chloroform in that way. He had known several cases where bandages were tied round the horse's head and air was wholly excluded; but that was a very bad practice. He did not think that air impaired the effects of the chloroform, and it was thought a safe plan to allow air to enter during the time the horse was under chloroform. He invented the chloroform bag or muzzle, and he thought he had got it pretty perfect. It took time to get into the way of handling the bag, and the operator must be thoroughly acquainted with the administration of chloroform, which was one of the most useful things in the world. It was used in the farrier's shop at his place whenever there was a restive horse, and in less than five minutes after the muzzle was put on the horse could be shod as quiet as a lamb. In large establishments where they met with "brutes of horses," let them buy a chloroform bag. (Laughter.) He assured them he had not the faintest interest in it. (Laughter and Applause.)

Mr. LITTLE said opium was one of the best things he had used. He agreed with Mr. Donald that opium sometimes asserted its influence after blood had been abstracted from the animal. He attributed it not to the extraction of the blood, but to the pain being relieved.

He mentioned chloral hydrate as having escaped notice in the discussion.

Mr. J. G. BELL asked some of the older members their experience of chloroforming cattle. He had used chloroform a good deal on cattle, and had had some bad results from it. He had given up its use on dogs.

Mr. LITTLE asked if any member had chloroformed for cases of eversion of the uterus.

Mr. J. G. BELL said he had used it more than once in such cases, and found it answer very badly. Three or four cases died right away.

Mr. ARMSTRONG said they were indebted to Mr. Mayor for his address, especially with regard to the use of anæsthetics. He had gone in freely for the use of chloroform. He laid the horse first, and expected to have it over in five minutes after putting the muzzle on. His method was to exclude the air as much as possible. He never gave a horse more than 1½ ounces. He wrapped the head in a horse sheet, and by the time he had the instruments ready the animal was quite fit. He generally did all this himself. He opened the head out, and loosed the little flap in the muzzle. If the horse showed signs of coming round he put in a little more chloroform, or shut the lid down again. He had been unlucky with dogs, three having died in succession. He had begun to use two-thirds sulphuric ether and one-third chloroform and he had never had a fatal result since. Cocaine was the most useful agent. He attributed two cases of recovery to the administration of 1½ ounce doses every six hours, and they did not want above three before he saw a marked result. He had used it with success in castrating old dogs, painting 10 per cent. solution over the scrotum before the operation. In a case of chronic inflammation of the eye, he made a 6 per cent. solution of cocaine and told them to paint it three times a day. Yesterday the animal was not suffering the slightest pain, was doing well, and was likely to make itself fat.

Mr. CARLISLE said no man could say that 1½ ounce doses were sufficient at all times. He had seen when an ounce had had the desired effect. He did not advocate the external air being admitted all through the operation; he always put something round the head as well to keep it out. But he lifted the little lid sometimes and let the air in, or put in a few drops more of chloroform.

Mr. DONALD said in the case of cattle the respiration seemed to stop suddenly.

Mr. J. G. BELL said in cases of parturition in cattle under chloroform having finished the operation in a few cases before he got himself washed and dressed they were dead.

Mr. CARLISLE added that he had never known cases of partial anæsthesia in parturition, but in shoeing horses he knew of many cases.

The PRESIDENT added a few words to the discussion, observing upon the use of Indian hemp or hasheesh as a narcotic among horses. It was superior in every respect to opium; and had none of its bad qualities. In cases of tetanus he did not believe it had its compeer.

Mr. MAYOR replied upon the discussion. He disagreed with the statements that much time was taken up in chloroforming, and said he always cast the horse, and it did not take five minutes to place it under the influence of chloroform. They were pretty well agreed as to the initial dose of 1½ ounces. Morphia would be used according to the exigencies. The general range was 2 to 10 grains; the average dose about four grains. In cases of cattle, he had had two deaths. It was probable that chloroform accelerated death, and he got the credit of it.

Mr. DONALD.—That is the worst part of it.

Mr. MAYOR.—With reference to the combination of sedatives, in a great many cases the recommended doses were incorrect. In chlorodyne which was got from the druggists the recommended dose was two to four drams. If this was doubled it would be nearest the mark. With regard to the necessity for an assistant, he believed if a man used chloroform two or three times he would not be long before he would rather use it without an assistant than not use it without an assistant. He was pleased with Mr. Armstrong's remarks about the external application of cocaine in the case of dogs; he had been a little sceptical hitherto on that point, but after what had been said he would try it before long. Referring to cases of parturition, it was an advantage to have the mare or cow on its feet, but there were many which could not be kept on their feet, and in these cases where there was a bad presentation chloroform was a very great advantage. Where there was a difficult case and the animal would stop on its feet an injection of atropine and morphia was of considerable assistance. Chloral hydrate was another valuable sedative. He endorsed what the President had said about Indian hemp, except with regard to the dose. He gave about six drams of the extract in a case of enteritis. The horse went fast asleep for six hours with his head stuck in the manger.

The PRESIDENT.—It was a big dose. Two drams of the green extract of Indian hemp was about the right dose for a horse.

A vote of thanks, on the motion of the PRESIDENT, seconded by Mr. THOMPSON, was passed to Mr. Mayor, who promised to give another paper on the subject at a future meeting.

A vote of thanks to the President, on the motion of MR. MAYOR, seconded by MR. DONALD, concluded the meeting.

NATIONAL VETERINARY ASSOCIATION.

THE REQUISITE INSPECTION OF ANIMALS INTENDED FOR FOOD, PRIOR TO AND AFTER DEATH, WITH THE MOST HUMANE MODES OF SLAUGHTER.

By PROFESSOR M'FADYEAN, M.B., B.Sc., F.R.S.E.

(Continued from page 123*)*

INSPECTION AFTER SLAUGHTER.

This must be treated of under two heads: (1) the inspection of animals killed in the local abattoirs, and (2) the inspection of carcases introduced from without. With the last may be included the supervision of the sale of meat in the butchers' shops.

1. The inspection of animals killed in public abattoirs ought to be made at the time of slaughter. In short, the slaughter ought to be conducted in the presence of the inspector or inspectors. No doubt there are great difficulties in the way of doing that in most places at the present time, owing to the number of inspectors that would be required where there are numerous private slaughter houses. Even in places where private slaughter-houses are not allowed, as in Edinburgh, for example, a proper supervision of the slaughter may be difficult or impossible without an unreasonably large staff of inspectors. That must be the case in all large public abattoirs that are not constructed on the "Hall" system, as opposed to the "Chamber" system. Everyone who has had any experience in connection with meat inspection knows how quick and skilful butchers are in disposing of evidence of disease when the inspector's back is turned, and the only way of preventing the deception is to have the slaughter conducted under the eye of the inspector. The so-called meat inspection which consists

in looking at the dressed carcases after the butcher has completed his day's work, when most or all of the viscera have been put out of the way, deserves to be characterised as a huge deception. Can one imagine a medical man being seriously asked to conduct a *post-mortem* examination of a human body *minus* the viscera with a view to discovering the cause of death? And yet it is just as ridiculous for a veterinary surgeon to certify the fitness of a carcase for human food when he has had no opportunity to examine the internal organs.

If it is not possible to conduct the inspection while the animal is being skinned and eviscerated, the next best thing is to insist that the organs and their lymphatic glands shall be submitted to examination along with the carcase.

The order in which the various parts and organs are to be inspected is to some extent determined by the customary procedure of the butcher in dressing the carcase, at least when the inspection is made immediately after slaughter. When the examination is delayed until the butcher has completed his operations with the carcase, the inspector may examine the organs in whatever order he finds most convenient, but it is all-important to follow some definite order, and not to conduct the examination in an irregular, haphazard manner. This is a point which is not sufficiently enforced in some text-books on meat inspection. The following is suggested as a convenient order for the inspection in the case of cattle:—

1. *Skin.*—If an *ante-mortem* examination has been made, the inspection after death will be directed mainly to the detection of subcutaneous ecchymoses or extravasations due to bruising, etc.

2. *The Feet.*—For lesions of foot-and-mouth disease particularly.*

3. *The udder and supra-mammary lymphatic glands.*—The quarters of the udder ought to be criticised in respect of volume and resistance on palpation, and an incision ought to be made into each, exposing the milk cistern and gland substance. The supra-mammary glands ought to be incised, and searched for tuberculosis or other lesions.†

4. *Peritoneal cavity.*—For the escape of dropsical or inflammatory fluid.

5. *Intestines and mesenteric glands.*—Examination of the former has to be restricted to external inspection and palpation, unless these reveal the evidence of lesions in them. The mesenteric glands ought to be incised and searched for tuberculous lesions, the presence of pentastomata, acute inflammatory lesions, &c.

6. *Stomach and omentum.*—The former both externally (for tuberculosis lesions) and internally (for evidence of inflammation); the latter for tuberculosis, tumours, &c.

7. *Spleen.*—Particular attention to be paid to the volume and consistence (Anthrax). Both it and the splenic lymphatic glands ought to be incised. In case of splenic "tumour," the spleen pulp ought always to be examined microscopically for bacteria.

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Discussion.

The President: This paper, as is customary, has been circulated amongst the members, and everyone will have had a copy. Professor McCall was to have come down especially to open the discussion. He is a gentleman who has had very considerable experience in this direction, and we looked upon him as very necessary indeed to this special subject. Unfortunately he is not with us, and the Committee have had to do the best they could under the circumstances. Fortunately for us a gentleman has complied with our request, and will help us out of our difficulty; and when I tell you that that gentleman is Mr. Hunting, I am sure you will all appreciate the fact that we are very much indebted to him for having accepted Prof. McCall's position. I will at once ask him to proceed with the discussion.

Mr. William Hunting:—Mr. President and Gentlemen, nobody regrets so much as I do the absence of Prof. McCall. One word of compliment I must pay to the writer of the paper. I think the paper is a model of conciseness and lucidity; and these are two things of which I am decidedly fond in any paper, and in any writing. In the second paragraph you will find, referring to the modes of slaughter, I think, as concise a summary of what should take place as possible. "If a number of methods stand at our disposal, then our preference ought to be given to that which is the simplest in execution, the least expensive, the least injurious to the carcase, and the least liable to miscarriage or accident;" and then the paper goes on to discuss which system of slaughter is most in accordance with these requirements. The author mentions the pole-axe, a broad-faced hammer—which produces a different effect—and pithing. With regard to the method of producing unconsciousness by a

in looking at the dressed carcases after the butcher has completed his day's work, when most or all of the viscera have been put out of the way, deserves to be characterised as a huge deception. Can one imagine a medical man being seriously asked to conduct a *post-mortem* examination of a human body *minus* the viscera with a view to discovering the cause of death? And yet it is just as ridiculous for a veterinary surgeon to certify the fitness of a carcase for human food when he has had no opportunity to examine the internal organs.

If it is not possible to conduct the inspection while the animal is being skinned and eviscerated, the next best thing is to insist that the organs and their lymphatic glands shall be submitted to examination along with the carcase.

The order in which the various parts and organs are to be inspected is to some extent determined by the customary procedure of the butcher in dressing the carcase, at least when the inspection is made immediately after slaughter. When the examination is delayed until the butcher has completed his operations with the carcase, the inspector may examine the organs in whatever order he finds most convenient, but it is all-important to follow some definite order, and not to conduct the examination in an irregular, haphazard manner. This is a point which is not sufficiently enforced in some text-books on meat inspection. The following is suggested as a convenient order for the inspection in the case of cattle:—

1. *Skin.*—If an *ante-mortem* examination has been made, the inspection after death will be directed mainly to the detection of subcutaneous ecchymoses or extravasations due to bruising, etc.

2. *The Feet.*—For lesions of foot-and-mouth disease particularly.*

3. *The udder and supra-mammary lymphatic glands.*—The quarters of the udder ought to be criticised in respect of volume and resistance on palpation, and an incision ought to be made into each, exposing the milk cistern and gland substance. The supra-mammary glands ought to be incised, and searched for tuberculosis or other lesions.†

4. *Peritoneal cavity.*—For the escape of dropsical or inflammatory fluid.

5. *Intestines and mesenteric glands.*—Examination of the former has to be restricted to external inspection and palpation, unless these reveal the evidence of lesions in them. The mesenteric glands ought to be incised and searched for tuberculous lesions, the presence of pentastomata, acute inflammatory lesions, &c.

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Either on the same or next day, the animal is almost or altogether unable to move its limbs, and therefore remains lying for long periods on its side, though at the same time is able to take notice of everything that is going on around it, and to take food.

Death generally supervenes rapidly when this stage is reached—within a few hours or a day—often before it is expected, since it is not unusual that animals supposed to be only slightly affected, or even on the mend over night, are found dead next morning.

Among less conspicuous symptoms, affected animals not unfrequently have a rapid beat of the heart, rapid, sometimes laboured respiration, and rise of temperature.

Dr. Klein made post-mortem examinations of seventeen animals; few of these died a natural death, some in the earliest, some in the later stages of the illness.

POST-MORTEM APPEARANCES.

For the particulars in detail of the post-mortem appearances, Dr. Klein's full report (which will be given in the next number of the Royal Agricultural Society's Journal) must be referred to. For the purpose of the present letter it will be sufficient to refer to them very shortly.

1st. The constant and most conspicuous feature is invariable congestion at the base of the brain and medulla.

This congestion of the vessels, is, however, limited chiefly to the surface; the cerebral and medullary substance itself not showing anything abnormal in these respects.

2nd. After the earlier stages of the disease the lungs are found to be in a congested and consolidated condition.

3rd. A further important change is noticeable in the heart. In sheep the congestion is always present, except in the earlier phases, but in lambs only to a smaller extent, and only in the latter stages of the disease.

There seems little abnormal in the liver, spleen, stomach, or kidneys, and the blood is normal in its appearance and coagualability.

Dr. Klein considers that of all the appearances described above, those affecting the medulla could alone account for the symptoms observed during life, and for the fatal issue. And the question arises—What causes this congestion? Or, in other words,

WHAT IS THE CAUSE OF THE DISEASE?

There are several points well established, which point out the malady belonging to the class of infectious disorders.

1st. The disease has a seasonal and local epidemic character, commencing generally in April, and continuing into the month of June. In this respect its similarity to certain infectious diseases in man and animals is striking.

With regard also to its preference for certain localities "Louping Ill" partakes of the character of infectious disease. It appears to be known only in certain districts in the North of England and Scotland, and even where it prevails, is so local, that a fence between one sheep farm and the next is often the boundary between infected and uninfected areas.

2nd. It is clear that the cause of the disease is to be found in the soil. A proof of this is the well-established fact, that a new flock of sheep introduced on to an infected area will suffer from the disease in the following spring, and as a rule far more severely than the old stock.

Infectious diseases having similar characteristics are not rare. Thus, in the cases of both anthrax in animals and malarial fever in man (ague) the "contagium" of the disease is received into the body by the digestive or respiratory organs.

THE SOURCE OF INFECTION.

With regard to Louping Ill it is the almost universal custom when an animal dies for its carcase to be left to rot away on the moors till it disappears. Supposing that, as in other infectious diseases, the body of the dead animal contains the "contagium" in an enormous crop of the specific microbes, it is obvious that if it is allowed to remain unburied or unburned, numbers of the microbes have an opportunity of becoming distributed over the soil, to remain there ready for new mischief when the favourable time (the spring season) and opportunity (an animal susceptible to the disease) offer themselves.

Conditions like these would readily account for the soil of one locality retaining the source of infection with great persistence, whereas a neighbouring locality remains free year after year.

"WHITE TICK."

There exists a strong, if not universal, opinion that the disease is caused by a "tick," locally known as "white tick," as opposed to the ordinary black sheep tick, and this is based on the following assertions:—That this tick is present where the disease occur, and is absent where the disease is unknown.

That it is found concurrently with the disease there can be no doubt, but that it is invariably absent where there is no disease, or invariably present where there is disease, are conclusions that Dr. Klein will not at present admit, and adds: "My doubts will, I am afraid, not grow less strong, the greater the confidence with which the assertion is put forth, unless it is set at rest by a thorough examination into the question, made by a zoologist well qualified to give an opinion."

His doubts are based on the following remarkable facts:—

That it seems inconceivable that an insect possessed of such powers of locomotion as the tick, should be present on one farm, and should be excluded from the next, the only boundary being a wire or loose stone fence.

That the tick is undoubtedly present on many sheep which have not got the disease; and that though cattle sometimes take the disease they are not infected by the white tick. That this tick should be the primary cause of the disease under such circumstances seems impossible of acceptance, and there is certainly nothing in the whole range of pathology that would offer a simile to such remarkable conditions.

So far as Dr. Klein could see these ticks seemed merely to suck the blood, and produced locally no more—in fact less—injury than many other well-known parasites. The undoubted fact, however, mentioned above, and admitted on all sides, viz., that this tick is found in the skin of animals that are and remain free of louping ill, seems finally to dispose of the theory that the tick is the real and proximate cause of the disease.

COMMUNICATION OF DISEASE.

The disease is apparently communicable from one animal to another. It is well-known that if a ewe contracts the disease, her lamb also does so, with few exceptions; but the lamb may have it without its dam taking it. The explanation is evidently that the lamb always follows and is always in close relationship to the ewe. One of the first signs of illness is that the animal is dull, and separates from the rest. If this happens to be a ewe, the lamb remains with her, and, therefore, if the disease be infectious, it is to be expected that sooner or later the lamb would take it from its mother. But the reverse would not be the case, as we should find one of two things happen: either the lamb being ill would not or could not follow its mother, who consequently would not be so much exposed to infection; or, owing to the apparent neglect of the dam, and for other reasons,

the shepherd would remove the lamb and take it into a shed to nurse it.

These facts taken together, strongly point to the disease being communicable from animal to animal.

How to Stamp out the Epidemic.

Another phenomenon seems worth mentioning, though it may have been purely accidental, or owing to the exceptionally fine and dry spring weather of the present year, which is that, whereas the disease appeared at Kielder at about its usual time, viz., the third week in April, and though the climax is usually not reached before the middle of May, yet by the 10th of that month, few, if any, cases could be obtained for examination, and the epidemic had practically ceased. Now this year, for the first time, every smitten animal was at once separated in that neighbourhood, and brought in for examination, and thus ceased to be a focus for further infection for others, and it certainly appears probable that this may have had a material effect in stamping out the epidemic. At any rate, Dr. Klein is strongly of opinion that it is in this direction that action should be given, viz., that as soon as a sheep is affected it should be at once separated from the rest, and kept carefully isolated in a paddock for the purpose. No harm could be done, and it is hoped that it may be the cause of largely diminishing the number of cases. It could not do away with the disease the cause of which in first cases is in the soil; but it may limit the infection being subsequently communicated to others.

Dr. Klein's Report.

For the description of Dr. Klein's pathological investigations of the "louping-ill" recourse must be had to his report; but it may be stated shortly that he obtained positive results in six out of the seventeen cases he investigated. In each of the six the same microbe was present, but an attempt to communicate the disease by means of this microbe to two healthy lambs was not successful. There is, however, doubtless room for further investigation in this direction for the final and entire solution of the question, towards the elucidation of which there is no doubt Dr. Klein's able and carefully considered report will be most valuable.

When it is considered that the size of the microbe or bacillus is only about 1-25,000 part of an inch, it may be conceived the prodigious myriads which are contained in the carcase of one dead sheep, and the large risk of infection occasioned by their being spread over the ground by rain and other agencies; and it is sincerely to be hoped that farmers and shepherds will, for their own sakes, give Dr. Klein's suggestion a full and fair trial—viz., to isolate all affected cases, and to at once destroy and bury or burn all carcases of animals which have died of the disease. Should this course have the hoped-for result, "louping-ill" may, ere long, cease to be the terrible scourge it has so long been in the districts where it is prevalent.

The Live Stock Journal commenting on Mr. E. G. Wheeler's letter says:—

"The two conditions, viz., the contraction of the disease in the first instance, by contagium present, or left in or on the soil by a previous epidemic, and the subsequent spread of the disease from an infected animal to others, are well known to occur in other infectious disorders, both of men and animals.

All these considerations point to the conclusion that "louping-ill" is to be classed among infectious or communicable diseases. There can be no doubt that if it can be shown that the growth and multiplication, within an affected animal, of a particular microbe is intimately associated with the disease; if, further, this microbe can be artificially cultivated, and, with a particle of such a cultivation, or the morbid matter from which it is derived, the same disease can, by inoculation, by ingestion, or by inhalation, be reproduced in a susceptible animal, with the multiplication in this experimental animal of the specific microbe—then proof has been established that such disease is of the order of infectious diseases, and is caused by that particular microbe. In the case of that disease the early isolation and removal, and the careful destruction of the affected animals, is the surest means of the prevention and spread of the disease. Though this series of proofs is desirable before the problem can be said to be satisfactorily solved, it is not always possible to obtain it. In some of the well-known communicable diseases, such as small-pox of sheep, small-pox of man, hydrophobia or rabies, and others, though these belong to the best-known communicable diseases, the specific microbe has hitherto eluded discovery. Some of the ablest pathologists have in vain searched for it, yet we may take it as a fact that, like other infectious diseases in man and animals, in which the search has been successful, such as anthrax of sheep and cattle, tuberculosis, swine fever, grouse disease, and a host of others, these diseases must be caused by living self-multiplying microbes.

PLEURO-PNEUMONIA AND THE CANADIAN CATTLE TRADE.

A Blue-book was published on Wednesday giving papers and correspondence relating to the landing in Great Britain from Canada of cattle affected with pleuro-pneumonia. The correspondence was begun last November by the Colonial Office sending to the Board of Agriculture letters from the Acting High Commissioner for Canada with respect to the alleged cases of pleuro-pneumonia in the cargoes of the Monkseaton and the Hurona, begging to have the decision of the Government in the matter postponed until the return of Sir Charles Tupper, who was then in Paris conducting a commercial arrangement between Canada and France. On November 5th the Secretary to the Board of Agriculture wrote saying that the Board felt obliged to revoke the order by which Canadian animals had not hitherto been subject to slaughter at the port of landing. Then followed letters and telegrams begging that the time for revocation might be postponed. This the Board of Agriculture refused to grant. In February this year the Governor-General forwarded to the Colonial Office a report of the Committee of the Canadian Privy Council, made in January, setting forth that pleuro-pneumonia was unknown in the district whence the cattle in question were traced to have come, and suggesting that there must have been an error in the diagnosis. The report also called attention to the stringent restrictions enforced upon importation into Canada of cattle from the United States. Appended to the report was a long list of reports by veterinary surgeons showing that no pleuro-pneumonia existed in the districts inspected. The Board of Agriculture, being again pressed as to the revocation of the order, again refused to reconsider their decision, The result of this was that it was agreed that Canadian cattle should, when landed, be slaughtered in special slaughterhouses, and that the lungs of the animals should be examined in order to ascertain if any diseased animals were imported from Canada. In

July the Board of Agriculture published the results of these investigations, and stated that for the time being it was impossible to be satisfied that reasonable security existed against the importation of diseased animals from Canada. The Canadian Government in reply, produced reports made by Dr. Woodhead and Mr. Hunting on the lungs of some of the slaughtered animals, and these reports went to show that the disease found to exist in some of them was not contagious pleuro-pneumonia, but an inflammation of the lungs.—*The Times.*

"The Veterinary Surgeons Still at it."

Commenting on the conviction of a man named Albert Holbrook for having on the door of his blacksmith's shop, in Little Exeter Street, Sloane Street, the following inscription:—"A. Holbrook. Veterinary shoeing-forge. With the late T. Witten." *The Chemist and Druggist* says: We are not much surprised at the action of the College in continuing these prosecutions after the sharp reverse experienced the last time the College appeared in the Queen's Bench Division. But we are surprised at Mr. de Rutzen. There is no substantial distinction between "veterinary forge" and "veterinary chemist." The same arguments both for and against apply to both, and, to use Mr. de Rutzen's own words, we may say that every publicity appears to have been given to the decision of the Queen's Bench, and he (the Magistrate) must have known of it. At least it is as reasonable to expect it of him as of a blacksmith. We hope that when another case comes before him he will be as familiar with the second judgment as with the first. Let him then adopt the one which seems to be the most reasonable.

CORRESPONDENCE.

ANÆSTHETICS IN VETERINARY PRACTICE.

SIR,

In the issue of *The Veterinary Record* for August 26th, there appears an editorial on the subject of "Anæsthetics in Veterinary Practice," containing statements which would lead a lay reader to imagine that the real reason why the use of anæsthetics is not general, is because of the extra time involved, and the want of proper remuneration for the extra trouble. The question of humanity is not entertained at all, as the whole question is reduced down to a matter of pounds, shillings and pence. Surely we cannot believe that by such arguments we are elevating the standard of veterinary surgery or meriting the motto we claim, viz., *Humanitas, Scientia, Utilitas.*

We read that "In serious or lengthy operations the operator cannot attend to the chloroform, and another qualified man must be employed and paid." If a practitioner has daily a number of lengthy or serious operations he surely will have either a qualified assistant or an intelligent, pupil, either of whom will be perfectly capable of attending to the administration of the anæsthetic. Unfortunately there are not so very many practitioners blessed with such a large surgical practice, and they can without difficulty arrange their time so as to provide for the extra delay caused by the anæsthetic.

But we are justified in enquiring if there is such a great loss of time as is usually described. From experience I can confidently affirm that there is not. Of course we must admit that there are some patients which it is difficult to anæsthetise and which, as a result of the agent used, become affected with secondary symptoms of narcosis, requiring an indefinite period to return to full consciousness; but such cases are exceptions to the rule, and should not in the least influence us in our course of action.

With reference to the primary struggling as indicating terror in the animal, we must be perfectly well aware that although terror may increase the appearances of pain, it is very different to pain itself. Many horses, just like human beings, are of a nervous temperament, and act very much in a similar manner. That they struggle very violently at first in many cases is well known, but we are well aware that the exciting stage of chloroform is of a far different sensation to that of pain. In veterinary surgery in many operations there is a frightful amount of pain inflicted if no anæsthetic is employed. Take the operation of neurotomy, or the different operations for quittor, and can we make ourselves believe that the struggling, groaning and sweating are not indications of acute agony, or take an operation for excision of a large scirrhous cord, or a large fibrous tumour, and can we consider such as surgery in proper sense, if the unfortunate animal is incessantly struggling at every incision made, causing extra hœmorrhage, and weakening itself with extra exertion. It is more than double work to the operator, and the time lost by the administration of an anæsthetic and waiting for the effects to pass off is a very small matter compared to the constant exertion required both to save himself from injury, and prevent his patient from succumbing to hœmorrhage.

It is absurd to imagine that veterinary surgeons are not guided by the dictates of humanity, in a similar manner to other individuals. That there are exceptions we are perfectly well aware; men who boast of their wonderful pluck and nerve power, who would not hesitate to spend a long time exposing the metacarpal nerves in neurotomy, or slowly cutting away the most sensitive structures in the foot in cases of quittor, quite unmindful of the mute appeals of the unfortunate patient, who, bound down in a helpless manner, can only demonstrate the acute agony by struggling and writhing. But take such men when a small operation is to be performed on themselves. How the vaunted pluck will be banished; and we may take it as a rule, that men who have no regard for the feelings of animals are the worst subjects for standing pain themselves, and are also of a brutal nature to their own species.

It is impossible to persuade us that the employment of anæsthetics in our practice will not become general in the near future. We must recollect that when first discovered in human practice there was enormous prejudice against their use, and one man was nearly sentenced to death for having employed chloroform in a difficult midwifery case.—Yours faithfully,

E. WALLIS HOARE, F.R.C.V.S.

Cork, Aug., 28, 1893.

[If our correspondent will again read the note complained of he will perhaps see that it had a nearly opposite significance to that he supposes.—ED.]

COMMUNICATIONS, BOOKS, AND PAPERS RECEIVED:—Messrs. F. W. Somers, E. W. Hoare, H. Thompson, J. Malcolm, H. Thompson; "Evening Telegraph" (Dublin).

We shall be obliged by early intelligence of all matters worth bringing under the notice of the profession, and thankful to any friends who may send us cuttings from local papers, containing facts of interest.

Original articles and reports should be written on one side only of the paper, and authenticated by the names and addresses of the writers, not necessarily for publication.